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The impact of a microbial sealant to reduce surgical site infection reduction in cardiac surgery

P. Dohmen[1,*], T. Christ[1], J. linneweber[2], W. Konertz[1]

[1] *Charite Hospital, Medical University Berlin, Berlin, Germany*
[2] *Charite Hospital, Medical University Berlin, Berlin, Germany*

Background: Surgical site infection (SSI) do have a serious impact on patients undergoing cardiac surgery. This study was performed to prove if additional preoperative care by using a microbial sealant can reduce surgical site infection.

Methods: To improve preoperative surgical care two groups of patients were identified during thes same period of time. Between January and August 2007, a control group (n = 718), receiving standard institutional preoperative preparation and between January and August 2008,the InteguSeal group (n = 780) who received additionally a microbial sealant prior to sternotomy. Both groups were evaluated by patients characteristics and a pre-operative risk scores. End-point of this study was freedom from SSI.

Results: Follow up was 100% completed. The values of the pre-operative risk score of the control group and the InteguSeal group was significantly different in both groups, respectively 9.7. ± 1.5 and 10.1 ± 1.8 (p = 0.001).

The clinical end-point, however showed a highly significant decrease of SSI in the InteguSeal group 1.4% (n = 11) compared with the control group 4.3% (n = 31), (p < 0.003) althrough they were at higher risk for SSI.

Conclusion: Thus, the pre-operative risk score for patients of the InteguSeal group was significant higher compared to the control group, there was a highly significant reduction of surgical site infections seen.

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The global burden of infective endocarditis: Methodology for a systematic review to assess disease burden and trends in 21 world regions for 1990-2005

I.M. Tleyjeh[1,*], M. George[2], A. Bin Abdulhak[3], E. Patricia[4], V. Chu[5], M. Ezzati[6], B. Hoen[7], L.M. Baddour[8]

[1] *KING FAHD MEDICAL CITY, RIYADH, Saudi Arabia*
[2] *pepsico, gerogia, GA, USA*
[3] *King Fahd Medical City, Riyadh, Saudi Arabia*
[4] *Mayo clinic, Rochester, MN, USA*
[5] *Duke university, North carolina, NC, USA*
[6] *harvard, Boston, MA, USA*
[7] *University, Paris, Paris, France*
[8] *MAYO CLINIC COLLEGE OF MEDICINE, ROCHESTER, MN, USA*

Background: Infective endocarditis(IE) is an important contributor to mortality and morbidity worldwide. However, previous work in the global burden of diseases, injuries,and the methdology for a comprehensive assessment of IE burden trends in 21 world regions for 1990-2005 as part of the current GBD 2005 effort.

Methods: A systematic review of published studies, surveys,and other data sources is being conducted in order to assess the global epidemiology of IE and related disabling sequelae. Cases of IE were defined according to the Duke, modified Duke, Steckelberg,Von Reyn and modified Von Reyn. A simplified model was used for the systematic review and it included cure,valve surgery,stroke, and death.Electronic databases included.

MEDLINE,EMBASE,LILACK, KoreaMED, AMED, EXTRAMED, scopus and web of science.Only population based studies were used to estimte the incidence.

Results: We identified 121 studies: 21 population-based,21 multicenter studies, and 79 hospital cohorts. Data originated from 40 countries and 2 international collaborations. Only 18 population based studies reported on the incidence of IE/100,000 in 9 countries.Australia(3), France (2.2,3), Denmark(2.4,2.7),Italy (3.6), Netherlands(1.5,9.6), Sweden(0.39,6.2), Tunisia(5.5), UK(1.6,2.3), USA(1.7,3.8,4.2,4.95,11.6). Valve replacement was performed on 30%(mean) and 29%(median) of IE cases.Stroke occured in 15%(mean)and 14%(median).Mortality occured in 23%(mean) and 21%(median) of cases. Bias secondary to incomplete data, non representative populations, and missing data for national or regional populations remain important challenge. Specific strategies to address this limitation are ongoing and include (1) translating non-English studies (2) searching the gray literature; and (3) contacting IE experts in world regions with limited or no data.

Conclusion: A comprehensive and systematic assessment of the global burden and trends in IE mortality and disability using a rigorous methodology is being conducted. IE is a relatively uncommon disease but is associated with significant morbidity and mortality. Completion of this effort will add substantively to the summary estimates of cardiovascular mortality and disability.

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Psoas abscess in Korea: Etiology, clinical features, treatment and outcome

M.W. Kang*, Y.J. Kim, K.-W. Hong, S.I. Kim, Y.R. Kim

The catholic University of Korea, Seoul, Korea, Republic of

Background: Abscess of the psoas muscle is a rare disease. Because of nonspecific presentation, it is difficult to diagnosis. There is a wide spectrum in etiology, time to diagnosis, and therapeutic options. This study is to describe the etiology, clinical features, treatment, and outcome of psoas abscess from multicenter in Korea.

Methods: We retrospectively reviewed the medical records of patients with psoas muscle abscess who were admitted to three university hospitals in Korea over 10 years.

Results: A total of 87 patients (46 male, 41 female) were included in this study. The mean age was 56.3 ± 18.5 years old. The mean duration of hospitalization was 31.9 ± 24.37

days, time from admission to diagnosis was 13.6 ± 82.9 days. Fourteen cases as ''secondary'' abscess, and pyelonephritis (7/14, 50%) were most frequent etiology. Positive blood culture were obtained in 25% (27/81) and the causative pathogens were *S. aureus* (17/27, 62.8%), *E.coli* (4/27, 14.8%), *Coagulase negative staphylococci* (3/27, 11.1%), *K. pneumoniae* (2/27, 7.4%) and *Candida* species (1/27, 3.7%). Among 49 patients who were cultivated from abscess material, 41 microorganisms were grown in 34 patients (35/49, 71.4%) and the most frequent organisms were *S. aureus* (17/35, 41.5%) *E. coli* (6/35, 114.6%), *K. pneumoniae* (5/35, 12.2%). Forty patients(45.9%) underwent surgical debridement, 11 percutaneous drainage, 4 aspiration, and 31 patients were received only antibiotic treatment. The overall mortality was 10% (n = 9). Comparison of treatment options showed mortality was not significant different between patients for only antibiotics and for antibiotics plus invasive procedure (12.9% (4/31) vs 8.9% (5/56), p = 0.55).

Conclusion: The etiology of psoas abscess can vary with each countries. In Korea, ''primary'' psoas abscess was more prevalent than ''secondary'' psoas abscess, and *S.aureus* was the most prevalent organism. The causative organisms can be identified by abscess culture in most cases. High index of suspicion is important to early diagnosis.

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Mortality and ICU-admission in community-acquired pneumonia: CURB-65 score validation in Uruguay

H. Albornoz[1,*], D. Goleniuk[2]

[1] *Hospital Departamental de Rivera and Cooperativa de Asistencia Medica de Rivera-FEMI, Montevideo, Uruguay*
[2] *Hospital Departamental de Rivera, Cooperativa de Asistencia Medica de Rivera-FEMI and Cooperativa Medica de Rivera, Rivera, Uruguay*

Background: Community-acquired Pneumonia (CAP) is still an important health problem with high mortality. Early identification of patients with severe CAP should improve the results. CURB-65 score of the British Throracic Society is one of the simplest predictor's score of mortality and intensive care unit admission (ICU). Objetive: to validate the CURB-65 score in CAP patients admitted to three community hospitals in Rivera, Uruguay.

Methods: A prospective cohort of CAP patients admitted between 1st May 2005 and 30th April 2007 was included and followed up until one year of hospital discharge. Area under the ROC and specificity and sensibility were estimated for CURB-65 score for 28 days-mortality and ICU-admission.

Results: 495 patients (63 ± 19 years, male 53.9%) were included. 28-days mortality and ICUadmission were 20.8% (102/491) and 19.9% (98/492), respectively. 28-days mortality in patients with CURB-65 0, 1, 2, 3 and 4-5 was 4 (6/150), 14.2 (30/211), 43.6 (41/94), 67.7 (21/31) and 80% (4/5), respectively (p < 0.001). ICU admission in patients with CURB-65 0, 1, 2, 3 and 4-5 was 8 (12/150), 15 (32/213), 29.5 (28/95), 74.2 (23/31) and 100% (3/3), respectively (p < 0.001). Area under the ROC was 0.79 (CI 95% 0.74 — 0.84, p < 0.001) and 0.73 (CI 95% 0.67- 0.79, p < 0.001) for 28-days mortality and ICU-admission, respectively.

Conclusion: CURB-65 score showed a good discrimination capacity for ICU-admission and 28 days-mortality in CAP in Uruguay and could be used for early identification of patients with high mortality and requiring ICU-admission in Uruguay.

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Encrusted Pyelitis: A kidney stone disease of infectious origin

M. Lodigiani*, C. Ottone, V. Bellesi, D. Cera, S. Rojas, A. Celentano, S. Ripoll

Hospital de Emergencias Dr Clemente Alvarez, Rosario, Argentina

Background: Encrusted Pyelitis is a rare stone disease related to group D2 Corynebacterium.

It was first described in 1993 by Aguado- Morales et-al in transplanted patients and later in patients with native kidney having predisposing factors which were underlying urologic disease and/or urologic manipulation, debilitating disease, hospitalization, and prolonged antibiotic therapies.

Methods: A 31- year-old female with a history of repeated urinary tract infection who required a left nephrectomy was studied. She was admitted in our service because of persistent symptoms of pyelonephritis with no growth of bacteria on urine culture, and the presence of obstructive acute renal failure.

Ultrasound of the kidney detected hyperechogenic material in the pelvis. Mild dilation of right ureter with a 4 mm diameter stone in distal urether.

Abdominal CT: right kidney with abnormal morphology and loss of cortico-medular differentiation. Hyperdense lesions with coraliform lithiasic aspect.

A percutaneous nephrostomy was performed.

A coraliform stone was seen and the presence of Corynebacterium Urealyticum in the urine culture and culture of the stone was detected. Treatment with vancomicine was completed for 21 days.

Results: Encrusted Pyelitis is characterized by accumulation of struvite crystals in ulceronecrotic lesions of an inflamed and infected chorion of the urinary tract. It's related to the colonization with C. Urealyticum, aerobic gram positive bacilli, non sporulated, with frequently groups with a V shape, positive catalasa, negative nitrate, positive ureasa. C. Urealyticum is a common hast of skin and mucosa, particularly in genital area which, in presence of predisposing conditions, colonizes the urinary tract causing infection. The clinical manifestations are a triad of pyuria-hematuria, alkaline urine and presence of struvite crystals. The growth of C. Urealyticum in urine samples increases when a selective culture is used and the period of incubation is of 48 hours. C. Urealyticum is generally resistant to B-lactamic and amuinoglucosides and sensible to vancomicine and teicoplamine; with variable sensibility to quinolones, erithromicin, rifampicin and tetracycline.